

- wherein the first detectable delayed emission, if present upon excitation of the first emissive species, corresponds to identification of the first emissive species being exposed to the first temporal thermal history and the second detectable delayed emission, if detectable, corresponds to identification of the second emissive species being exposed to the second temporal thermal history.
3. A label as in claim 2, wherein the label is configured to be proactively added to an article, such that the label provides a temporal thermal profile of the article.
4. A method, comprising:
 exciting one or more emissive species associated with an article; and
 detecting, using a detector, a detectable delayed emission of the emissive species,
 wherein the detectable delayed emission, if present, has a delayed emission of greater than or equal to 10 nano-seconds, and
 wherein the detectable delayed emission, if present, corresponds to an exposure of the article to a temporal thermal history.
- 5-6. (canceled)
7. A method as claim 4, further comprising detecting, using the detector, a detectable steady-state emission of the one or more emissive species.
8. A method as claim 4, wherein detecting comprises a rolling shutter mechanism.
9. A method as claim 4, wherein the detectable delayed emission comprises a peak intensity, emission lifetime, absorption wavelength, and/or emission wavelength.
10. A method as claim 4, wherein the response involves a change in the wavelength of the absorption or emission related to the delayed emission.

11. A method as claim 4, the response involves a change in intensity of a detectable signal.
12. A method as claim 4, the response involves a change in the delayed emission lifetime.
13. A method as claim 4, the response involves the creation of a new delayed emission.
14. A method as claim 4, the response involves the removal of a delayed emission.
15. A method as claim 4, the response involves two components combining to produce or remove a delayed emission.
16. A method as claim 4, wherein the label is produced by the deposition of second material onto a delayed emission material in order to produce a system capable of displaying a temporal thermal history.
17. A method as claim 4, wherein the response involves a matrix that changes its physical properties to create changes in the delayed emission signal
18. A method as claim 4, wherein the response involves the diffusion of one or more materials to create changes in the delayed emission signal
19. A method as claim 4, wherein the response involves a matrix that undergoes a phase change that produces the delayed emission signal
20. A method as claim 4, wherein the response involves chemical reaction to produce the delayed emission signal
21. A method as claim 4, wherein the response involves changes in aggregation to produce the delayed emission signal
22. A method as claim 4, wherein the response is produced by an enhancement in energy transfer from an antenna molecule or polymer to a delayed emission component.
- 23-53. (canceled)

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